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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/684,927 | 10/10/2000 | Hideki Usuki | DAIN: 563 | 2321 |

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PARKHURST & WENDEL, L.L.P.
1421 Prince Street, Suite 210
Alexandria, VA 22314-2805

| EXAMINER |
|---|
| XU, LING X |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1775 | 17 |

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-17

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/684,927 | USUKI ET AL. | |
| | Examiner | Art Unit | |
| | Ling X. Xu | 1775 | |

*-- Th MAILING DATE of this communication appears on th cover sheet with th correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1 and 4-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). *16* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 4-9 stand rejected under 35 U.S.C. 103(a) as obvious over Oshima et al. (US 5,427,997) in view of Kanto et al. (US 5,134,112).

Oshima discloses that a heat transfer sheet comprises (See Fig. 1):

- a release layer made of acrylic resin (Col. 5, lines 45-55);
- a transparent resin layer made of resins such as polyester, acrylic, epoxy resins (Col. 4, lines 45-55);
- a adhesive layer made of polyester resins;
- a substrate film;
- a back layer (Col. 4, lines 20-25) or a heat-resistant slip layer (Col. 21, lines 25-32).

Oshima also discloses that the release layer is not transferable and the resin layer is releasable from the substrate film (Col. 2, lines 10-20).

Oshima does not disclose that the adhesive layer contains microsilica in the range of 3-10%.

Kanto teaches by incorporating fine particles into the adhesive layer can reduce the coefficient of friction of its surface (Col. 6, lines 10-20). Examples of fine particles

are silica (microsilica, because the thickness of the adhesive layer is on the order of a few μm) (Col. 4, lines 12-20).

Kanto also teaches that the addition of such inorganic fine particles in the range of 0.01 to 10% by weight makes it possible to reduce the coefficient of friction of the surface of the adhesive layer (Col 4, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art to add microsilica in the range of 0.01 to 10% into the adhesive layer of Oshima in order to reduce the coefficient of friction of the surface of the adhesive layer, as taught by Kanto.

The combination of Oshima and Kanto teaches incorporating microsilica in the range of 0.01 to 10%, which includes the claimed range of 0.3-10%, in the adhesive layer.

As disclosed in the specification, the incorporation of microsilica into the protective layer can satisfy a requirement such that the coefficient of friction between the surface of the protective layer and the surface of the image-receiving sheet before thermal transfer is 0.05 to 0.5 in terms of $\mu_0$ and $\mu$ with the value of $\mu_0/\mu$ being 1.0 to 1.5. Accordingly, the adhesive layer added microsilica in the range of 0.01 to 10% as taught by Oshima and Kanto will also have the same properties as claimed, such as the coefficient of friction values.

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When

the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

***Response to Arguments***

2. Applicant's arguments filed 5/27/2003 have been fully considered but they are not persuasive.

Applicants argue that the advantages of the present invention are achieved by controlling both the quantity of microsilica and the coefficient between the surface of the protective layer and the surface of an image-receiving sheet prior to thermal transfer falling within the designated ranges for coefficient of static friction and coefficient of dynamic friction. The working and comparative examples show the differences resulting when operating inside and outside the ranges of the microsilica in the present claims and conclude that the ranges in the claims are not the ranges in the references. In addition, applicants cited *in re* Sernaker and argue that working and comparative examples much be assessed for their evidentiary value in support of patentability.

The Examiner disagrees applicants' assertion that the ranges in the claims are not the ranges in the reference. Kanto clearly teaches that the addition of microsilica fine particles in the range of 0.01 to 10% by weight, which includes the claimed range of 3-10% by weight, in the adhesive layer, as stated above.

With respect to the data shown in the working and comparative examples:

In Examples 1-4, the adhesive layers comprises silica in the range between 1 to 3 parts of silica and have coefficient of static friction $\mu_0$ from 0.39 to 0.46 and coefficient of dynamic friction $\mu$ from 0.39-0.46 with $\mu_0/\mu$ being 1.0.

In Comparative Example 1, the adhesive layer does not comprise silica. In Comparative Example 3, according to the Response filed on 5/27/2003, page 3, the adhesive layer contains about 14% silica. Because Kanto teaches that adhesive comprises microsilica in the range of 0.01 to 10% in the adhesive layer. Comparative Examples 1 and 3 are outside of the ranges disclosed by Kanto and recited in the present claims. Therefore, Comparative Examples 1 and 3 are irrelevant for the discussion of the difference between the references and the present invention.

In Comparative Example 2 (also shown in Table 1 of the specification), the adhesive layer comprise 0.01 part of silica and has coefficient of static friction $\mu_0$ of 0.51 and coefficient of dynamic friction $\mu$ of 0.51 with $\mu_0/\mu$ being 1.0. The amount of silica in Comparative Example 2 is significantly less than the amount of silica used in Examples 1-4, however, the values of the coefficient of static friction and dynamic friction are not considered significantly different from the values shown in Examples 1-4 and the ratio of the coefficient $\mu_0/\mu$ is the same as shown in Examples 1-4.

In addition, the data shown in the Comparative Example 2 meets the claim limitations of the coefficient of static friction $\mu_0$ and coefficient of dynamic friction $\mu$ being 0.05 to 0.5 with $\mu_0/\mu$ being 1.0.

Similarly, the data in Table 2 of the specification also do not show significantly different between the working examples and the comparative examples.

Accordingly, the values resulted from the working examples and comparative examples are not sufficient to show differences between operating inside and outside the ranges in the present claims.

Therefore, the Examiner maintains all previous rejection based on 35USC 103(a).

Applicants indicated that there is a typographical error in working Example 2. Applicants are required to submit an amendment to correct the typographical error.

As indicated in the Interview Summary, the applicants have been informed that the "additional comparative data" mentioned in the Response on page 3 has not been received in the Office as of 6/5/2003.

***Conclusion***

3. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 703-305-0395. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Ling X. Xu
Examiner
Art Unit 1775

DEBORAH JONES
SUPERVISORY PATENT EXAMINER

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June 11, 2003